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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,307	11/18/2003	Dirk N. Yerian	36110	6918
116	7590	07/11/2006	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			EWALD, MARIA VERONICA	
			ART UNIT	PAPER NUMBER
			1722	

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/716,307	<b>Applicant(s)</b> YERIAN ET AL.	
	<b>Examiner</b> Maria Veronica D. Ewald	<b>Art Unit</b> 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7 and 9-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-17 is/are allowed.
- 6) ☒ Claim(s) 7, 9, 10 and 18-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Allowable Subject Matter***

13. Claims 11 – 17 are allowed. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to show a powder preheating system comprising: a first tube having an auger screw for moving a powdered material through the first tube; means for heating the first tube such that the powdered material moving through the first tube is heated to a predetermined temperature without melting the powdered material, the means for heating being coupled to an outer portion of the first heated tube; a hopper coupled to the first heated tube and staged for dispensing the heated powdered material; a second heated tube coupled to the first heated tube to facilitate recirculating the powdered material between the first and second heated tubes; and a third tube coupled to the first and second heated tubes to store the powdered material.

### ***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Hay, et al. (U.S. 5,802,961). Hay, et al. teach a powder preheating system comprising

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(column 2, lines 10 – 15): a first tube having an auger screw for moving a powdered material through the first tube (item 200' – figure 4); means for heating the first tube such that the powdered material moving through the first tube is heated to predetermined temperature without melting the powdered material, the means for heating being coupled to an outer portion of the first heated tube (column 10, lines 40 – 50); a hopper coupled to the first heated tube and staged for dispensing the heated powdered material (item 248 – figure 4); and a second heated tube (item 200 – figure 4) coupled to the first heated tube to facilitate recirculating the powdered material between the first and second heated tubes (column 11, lines 1 – 15).

With respect to claim 26, Hay, et al. further teach a powder preheating system, comprising: at least one tube having powdered material flowing therethrough (column 2, lines 10 – 15; item 200' – figure 4); means for heating the tube such that the powdered material flowing through the tube is also heated, wherein the powdered material is not melted within the tube (column 10, lines 40 – 50); means for recirculating the powdered material through the at least one tube (figure 4; column 11, lines 1 – 15); means for feeding the powdered material from a storage bin to the at least one heated tube (item 248 – figure 4); and means for dispensing the heated powdered material from the at least one heated tube (item 214 – figure 4).

### ***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hay, et al. in view of Arpajian, et al. (U.S. 3,741,699). Hay, et al. teach the characteristics previously described but do not teach that the tubes are heated via water jackets.

In a method to pre-plasticize thermosetting resin powder, Arpajian, et al. teach the use of three extrusion cylinders (items 46, 48 and 50 – figure 2; column 3, lines 9 – 10). The resin powder is fed to the cylinders from a common hopper (column 3, lines 13 – 14). Each of the cylinders includes a screw (items 46B, 48B, and 50B) and is heated by jacketed heated fluid mediums (column 3, lines 18 – 23). The use of multiple tubes or cylinders shortens cycle time and provides for a more efficient means of dispensing material (column 2, lines 12 – 14). This reads on the Applicant's claim that the first and second heated tubes are heated via first and second water jackets having heated water flowing therethrough, the first and second water jackets substantially surrounding a circumference of the first and second heated tubes.

It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the apparatus of Hay, et al. with the water jackets of Arpajian, et al. for the purpose of heating the powder/particulate matter to maintain it at the desired temperature uniformly through the entire area of the tube itself.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hay, et al. in view of Arpajian, et al., and further in view of Morgan (U.S. 6,380,517). Hay, et al.

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and Arpajian, et al. teach the characteristics previously described but do not teach that the water jackets are baffled.

In a method to heat-treat solid particulates under vacuum conditions, Morgan teaches the use of heated gas. The gaseous exhaust conduit has a plurality of baffles connected to the inner walls by welds which are offset and spaced from each other along the horizontal axis to provide a tortuous path for the gases flowing therethrough and for distributing such gases (column 4, lines 30 – 34). Though Morgan teaches the use of a gaseous medium, the baffles are provided to maximize distribution of the gases used in a system to heat particulate matter.

Thus, it would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the apparatus of Hay, et al. with the water jackets of Arpajian, to further include the baffles of Morgan for the purpose of distributing the water through the jackets to maximize its distribution therethrough as taught by Morgan (column 4, lines 33 – 34).

Claims 18 – 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hay, et al. in view of McLeod, Jr. et al. (U.S. 3,645,505). Hay, et al. teach the characteristics previously described but do not teach the additional components of sensors and scales. In a method to add color to powdered plastic materials prior to injection molding, extrusion, or blow molding, McLeod, et al. teach there are two supply hoppers coupled with two screw conveyors leading to a blending conveyor (figure 2; column 4, lines 20 – 25). The upper metering conveyor (item 20 –

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figure 2) is used to add colorant to the base material coming in the second metering conveyor (item 16 – figure 2). There is a control system provided to meter the level of resin and colorant, which come from the hoppers to ultimately end at the blending conveyor (column 4, lines 40 – 45). This reads on the Applicant's claims that the apparatus is also comprised of a sensor located in at least one of the first and second tubes to sense when the powdered material is at or below a predetermined level (column 3, lines 50 – 60); a vibration chute coupled to the hopper to facilitate flow of the powdered material from the hopper (column 2, lines 55 – 65); a first scale to measure an amount of powdered material to be colored (column 4, lines 20 – 35); a second scale to measure an amount of powdered material dispensed from the hopper (column 4, lines 50 – 55); a scale to measure an amount of powdered material dispensed from the hopper (column 4, lines 35 – 40); a mixer to mix a pigment with the powdered material (column 4, lines 33 – 35); a pigment receptacle to meter an amount of pigment into the mixer (column 4, lines 43 – 46); a portable electronic device employed to operate the system (column 4, lines 25 – 30); and means for coloring the powdered material (column 4, lines 43 – 45).

It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the apparatus of Hay, et al. with the scales, mixer, vibratory chute and sensors of McLeod, et al. for the purposes of ensuring that the amounts of powder/particulate matter and colorant are adequately measured to the proper proportions desired, ensuring that the powder/particulate matter and colorant are

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adequately mixed together and for ensuring that the materials are thoroughly dispensed from the hoppers.

### ***Response to Arguments***

16. Applicant's arguments, see page 6, filed May 23, 2006, with respect to the rejection(s) of claim(s) 7 and 26 under Goe, et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hay, et al. Applicant persuasively argued and indicated that Goe, et al. did not teach that the powder material recirculated between the first and second heated tubes. Examiner agrees and thus, has cited the reference of Hay, et al. Hay, et al. teach an apparatus for particulate heat exchange and transfer, which is comprised of a first heated tube coupled to a second heated tube (figure 4), in which particulate matter (overflow) from the second heated tube (item 200 – figure 4) can pass from the outlet (item 238 – figure 4) and is transferred via a pump through a heat exchanger, and subsequently, recirculated back to the first heated tube (figure 4; column 11, lines 1 – 15).

In addition, claims 9 – 10, 18 – 27 are also rejected in light of the previously-cited secondary references; however, Examiner has again, indicated the allowability of claims 11 – 17.



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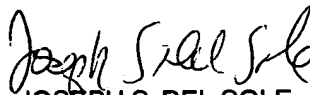
**Conclusion**

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVE

  
JOSEPH S. DEL SOLE  
PRIMARY EXAMINER  
7/6/06